

AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions and listings of claims in the application.

1. – 12. (Canceled)

13. (Currently Amended) A semiconductor device comprising:

a first semiconductor region (15) of a first conductive type;

a second semiconductor region (21) of a second conductive type formed on said first semiconductor region (15);

a third semiconductor region (13) of the first conductive type formed in a surface region of said second semiconductor region (21) along an outer periphery of said second semiconductor region (21), and having a higher impurity concentration than that of said first semiconductor region (15);

a fourth semiconductor region (14) of the first conductive type formed adjacent to a bottom surface of said third semiconductor region (13), and having a higher impurity concentration than that of said first semiconductor region (15);

a fifth semiconductor region (19) of the first conductive type formed in the surface region of said second semiconductor region (21);

a sixth semiconductor region (23) of the second conductive type formed in a surface region of said fifth semiconductor region (19);

a first electrode (2) electrically connected to said second semiconductor region (21);

a second electrode (4) electrically connected to said sixth semiconductor region (23); and

a control electrode (3) laid out on said fifth semiconductor region (19) through an insulating film (31),

an eighth semiconductor region (12) of the first conductive type formed in the surface region of said fifth semiconductor region (19) and having a higher impurity concentration than that of the fifth semiconductor region (19), wherein said fourth semiconductor region (14) is formed in said first semiconductor region (15) and said second semiconductor region (21), and has a protrusive piece (14a) so formed as to extend closer to said first electrode (2) side than said third semiconductor region

(13), and a portion (14b) so formed as not to extend closer to said first electrode (2) than said protrusive piece (14a),

~~The semiconductor device according to claim 12, wherein~~ said fifth semiconductor region (19) has regions (19b) including said sixth semiconductor region (23) and said eighth semiconductor region (12), and regions (19a) not including said sixth semiconductor region (23) and said eighth semiconductor region (12), and both regions are formed as to be alternately and apart from each other, and

said eighth semiconductor region (12) is electrically connected to a back gate electrode (5).

14. (Original) The semiconductor device according to claim 13, wherein the protrusive piece (14a) of said fourth semiconductor region (14) is formed beneath said region (19a) of said fifth semiconductor region (19) not including said sixth semiconductor region (23) and said eighth semiconductor region (12).

15. (Original) The semiconductor device according to claim 14, wherein the protrusive piece (14a) of said fourth semiconductor region (14) is so formed as to extend closer to said first electrode (2) than said fifth semiconductor region (19).

16. (Original) The semiconductor device according to claim 13, wherein the protrusive piece (14a) of said fourth semiconductor region (14) is not formed beneath said region (19b) of said fifth semiconductor region (19) including said sixth semiconductor region (23) and said eighth semiconductor region (12).

17. (Original) The semiconductor device according to claim 13, wherein the regions (19b) of said fifth semiconductor region (19), which include said sixth semiconductor region (23) and said eighth region (12), and the regions (19a) of said fifth semiconductor region (19) which do not include said sixth semiconductor region (23) and said eighth semiconductor region (12) are laid out in said fifth semiconductor region (19) alternately and apart from each other so as to surround said seventh semiconductor region (22), and said third semiconductor region (13) is formed in a closed ring shape so as to surround said fifth semiconductor region (19).

18. (Canceled)